

**ABSTRACT**

An improved cleaning fluid supply housing assembly for a cascade-type substrate scrubber having a sliding piston configured with a flange with recesses so that the piston is out of contact with the rotating part of the brush core mandrel bearing assembly. Rather, the piston flange outer  
5 face only contacts the stationary outer race of the mandrel bearing. The water supply piston is also configured with a full bore to minimize the pressure on the end of the mandrel. A tolerance-controlled leak through the bearing is provided by the configuration of the piston flange to provide a flushing of the area in which wear might be a source of particle generation by a controlled tolerance leak upstream of the brushes. These features substantially eliminate the source of particle gener-  
10 ation from contact wear and the contribution of such wear particles into the interface between the brush and the substrate surface being cleaned.